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VOL III-NO 6

SURGEON'S CIRCULAR LETTER



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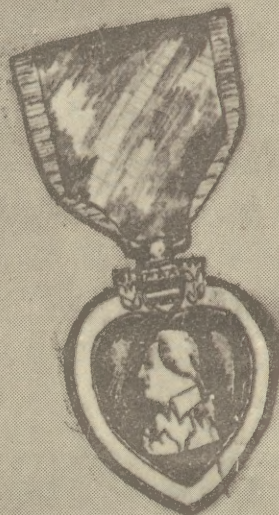
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United States Typhus Commission Medal is awarded to persons, who, on or after December 24, 1942, may contribute or render meritorious service in connection with the work of the Typhus Commission.



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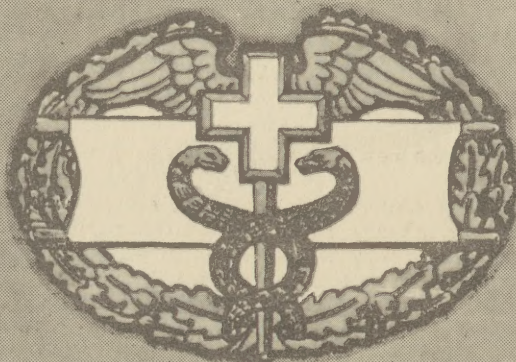
MILITARY MEDICAL BARS

AND DECORATIONS OF

THE ARMY OF THE

UNITED STATES

The Purple Heart, established by General George Washington at Newburgh, 7 August 1782, during the Revolutionary War, is awarded to members of the armed forces of the United States and to civilian citizens of the United States, who, while serving with the Army, are wounded in action against an enemy of the United States, or as a direct result of an act of such enemy, provided the wound necessitates treatment by a medical officer.



Badge, Medical, is awarded to Medical Department personnel regularly assigned or temporarily attached during combat to the medical detachments of infantry regiments, battalions or elements thereof since December 7, 1941 for satisfactory performance of duty under actual combat conditions - Award is identified by a stretcher placed horizontally behind a caduceus with a cross of the Geneva Convention at the junction of the wings, all inclosed by elliptical oak wreath. 1" in height and $1\frac{1}{2}$ " in width of oxidized silver.

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GENERAL HEADQUARTERS
FAR EAST COMMAND
MEDICAL SECTION

SURGEON'S CIRCULAR LETTER

APC 500

NUMBER. 6

1 June 1948

PART I

ADMINISTRATIVE

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I. Organization of the Medical Section

Promotion of General J. A. Bethea from Brigadier General to Major General was confirmed 28 April 1948.

II. New Professional Training Opportunities Offered Army Doctors

A revised and greatly expanded professional training program for regular Army and Reserve Medical Officers has been planned by office of The Surgeon General. In line with the policy of providing in the United States Army the highest standard of medical care in the world, the program calls for 1900 new doctors in the Regular Army and an increasing number of volunteer Reserve officers on active duty. The program is designed to give many more doctors the training needed to meet the requirements for certification by the American Specialty Boards, and to further integrate civilian and military medicine. The new program will facilitate the classification and career management system already in practice in the Medical Corps whereby every effort is made to assign professional officers to posts where they can practice in their special fields of interest.

Five major aspects of the new training program were described by The Surgeon General:

(1) Physicians already resident in civilian hospitals will be eligible for commissions in the Regular Army. Those commissioned may continue their residencies with full pay and allowances from the Army and will be assigned by the Army to the civilian hospital in which they are already resident. Even in the event of a major emergency, residents will complete their training if it is at all possible. Chances of continuing training for these men will be at least as good as those of civilian doctors in resident training. The Surgeon General's Office will commission 300 residents under this aspect of the program in 1948, 300 in 1949 - 50 as senior residents, 100 as residents and 150 as junior residents.

(2) Civilian interns will be eligible for Army Medical Corps Reserve commissions, and may continue their internship with full Army pay and allowances. Those so commissioned will undertake to accept a commission in the Regular Army on completion of their internship, and will then

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be permitted to compete for Army residencies in either Army or civilian hospitals. In 1948 and again in 1949, 300 interns will be included in this phase of the training program.

(3) During 1948, 500 younger doctors will be commissioned and assigned to duty at Army hospitals in order to compete for 260 residencies in both Army and civilian hospitals. Competitive examinations will begin either in September or October 1948. These residencies are apportioned among the various specialties according to the needs of the Army Medical Corps. Resignation of officers commissioned under this phase of the program will not be accepted within one year after the date of commission.

(4) One hundred and fifty commissions in the grades of major, lieutenant colonel and colonel will be offered in 1948 and another 150 in 1949, to doctors who have completed their training. This aspect of the program is not limited to those men already certified as specialists, since outstanding officers for command and staff positions are needed as well as professional men. Applicants for these commissions in higher grades will not be considered for residencies or specialty training.

(5) Active Reserve Service for specific positions and limited periods will be offered doctors who are not interested in a regular Army career. General announcements for such vacancies, will be made from time to time. Those who come into the service in this manner will not be eligible for residencies, but time spent in practice under this aspect of the program may receive recognition by the specialty boards.

The program is designed to attract to a regular Army career medical talent of the highest caliber. One year of active duty as distinguished from training duty is expected for each year of training, whether the training is received in army or civilian institutions. Resignations will not be considered until this obligation has been fulfilled.

Training continuous until completion of the requirements for Specialty Board certification is a definite aim of the program, The Surgeon General emphasized.

The program has been presented to the Council on Medical Education and Hospitals of the American Medical Association and to the Association of American Medical Colleges. Both bodies have officially recognized the value of the program in its entirety.

Information concerning any part of the program may be obtained from the Surgeon General's Office. Address requests to the attention of the Chief of Personnel, SGO, Department of the Army, Washington, D. C.

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III. Medical Service Reserve to Place 300 More Reserves on Active Duty

Authority has been granted to the Army Medical Department to immediately place three hundred additional Medical Service Reserve officers on extended active duty, it was announced recently by The Surgeon General of the Army. Reserve officers who volunteer will be assigned to duty in all four sections of the Corps, according to their qualifications. The greatest need is in the Medical Allied Science Section which includes personnel trained in psychology, physiology, biochemistry, nutrition, serology and other related medical sciences needed in the Army. The other three sections of the Medical Service Corps are the Pharmacy, Administrative and Supply Section, the Optometry Section and the Sanitary Engineering Section.

The recent formation of the Medical Service Corps is one phase of a long-range program designed to provide the highest possible standard of medical care for the U.S. Army with a minimum number of physicians required in administrative positions or performing duties properly belonging to medical allied sciences. While specialists in fields embraced by the Corps have always served in the Army, authorities felt that the former administrative set-up did not make for the fullest use of talent or the highest degree of individual satisfaction. The present grouping was inaugurated last year when officers in the former Sanitary Corps, Pharmacy Corps and Medical Administrative Corps Reserves were transferred to the newly formed Army Medical Service Reserve. The aim is to have each man practicing in the field for which his training and inclination best fit him and every effort is made to assign Reserve personnel to service paralleling their civilian pursuits.

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The Regular Army Medical Service Corps now has an authorized officer strength of 1,022. Vacancies in the Regular Corps will be filled through the medium of competitive tours of active duty for Reserve Officers, the Surgeon General said. Qualified men interested in a Regular Army career may apply for Reserve commissions. Those holding such commissions but on inactive status, may apply for active duty specifically to compete for Regular Army commissions. If, after making application for active duty, it is found that a Reserve officer's qualifications do not entitle him to compete, he may then withdraw his application.

Plans are also being made to expand further the graduate training program for Regular Army Medical Service Corps officers. The program currently includes training at a number of civilian institutions in a wide variety of subjects, including entomology, bacteriology, clinical psychology and public health. A score of leading universities are cooperating in this training program, including Johns Hopkins, Harvard, Northwestern, Columbia, and others.

For additional information, reference is made to the following publications:

SGO Cir #32, 7 March 1947, Training Policy for Medical Department Officers in Civilian Institutions at Government Expense.

WD Cir 187, 1947, Selection and Administration of Officers for Schools.

WD Cir 204, 1947, Section I, Courses at Civilian Institutions in Medical Specialties.

WD Cir 257, 1947, Training of Military Personnel in Civilian Institutions.

WD Cir 260, 1947, Program of Language and Language and Area Training.

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IV. Broad Education and Training Activities Announced by Army Medical Department

Subjects ranging from medical equipment mechanics for enlisted personnel to basic science for medical specialists and clinicians are currently being taught at Army Medical centers throughout this country and overseas, it was announced this week by the Army Medical Department. Civilian hospitals are generously cooperating with special facilities, courses and programs.

Primary goal of the expanding program is to provide an unequalled high standard of medical care for the U.S. Army. To reach this goal the Medical Department is offering its personnel -- men and women, recruits and seasoned campaigners -- increased opportunities for improvement in proficiency and for professional advancement.

The variety of training is illustrated by a list of the courses in progress at the moment. At the Army Medical Field Service School at Brooke Army Medical Center, San Antonio, for instance, there are 8-week courses for training as physical reconditioning instructor, surgical technician, medical technician, medical aid man, and medical equipment mechanic and 16-week courses in dental laboratory, medical laboratory, pharmacy and X-ray procedures for enlisted men. There are also 26-week courses in psychology and psychiatric social work for Medical Service Corps officers; a 24-week course in psychiatric nursing; a 16-week course in military neuropsychiatry; and an 8-week basic indoctrination course for nurses. Also at Brooke a 52-week course for dietetic interns will be completed in August. A 2-week course in mess administration for dietitians will begin this month.

The advanced basic science course for medical specialists now underway at the Army Medical Department Research and Graduate School, Army Medical Center, in Washington, D. C., has attracted wide attention in both medical and educational fields since its inauguration in January. Embodying the most modern and effective techniques in postgraduate education, it provides a thorough grounding in physics, chemistry, pharmacology and the other laboratory sciences as they relate to medical diagnosis and therapy.

At the St. Louis Army Medical Depot there are two 26-week courses scheduled to start soon for officers and enlisted men. One is on medical equipment repair and maintenance sponsored by the Joint Army and Navy Medical Procurement Office, and the other on optometry. There, also, a one-year course in medical supply for officers is under way. At Brooklyn Army and Navy Medical

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Procurement Office a similar course in medical supply procedures is being given.

Public Health training is also part of the Army Medical Department Program. At the Chicago Medical Depot an 8-week course in meat and dairy hygiene, to be given once every two months, is just starting.

Many civilian institutions are cooperating in the Army program. Three captains in the Army Nurse Corps have just completed a brief course in anesthesia at Providence Hospital. Other Army nurses are training in this field at civilian hospitals in Detroit, St. Louis, Joliet, San Antonio and other cities. Army personnel are taking courses ranging from a day or two to several years, at the best qualified civilian schools in bacteriology, basic sciences, biochemistry, business administration, cardiology, dermatology, chest diseases, endocrinology, gastro-enterology, general medicine, hermatology, hospital administration, infectious disease, internal medicine, medical library practice, metabolic disease, nursing, obstetrics and gynecology, operating room technique and management, ophthalmology, oral surgery, orthodontia, orthopedics, otolaryngology, pathology, pediatrics, psychology and psychiatry, periodontology, physical medicine, prosthetic dentistry, public health, pulmonary diseases, radiology, rheumatic diseases, sanitary engineering, surgery, toxicology, urology, and ward administration. The Army Medical Department arranges for personnel to take these courses and pays the tuition where required. Personnel receive full pay and allowances while studying at the civilian and Army institution. All six Corps of the Army Medical Department -- Medical, Dental, Nurse, Veterinary, Medical Service and Women's Medical Specialist Corps -- are represented in these training courses.

Medical Corps officers who desire to be certified by American specialty boards can participate in officially recognized programs leading to examination for specialist certification. At present approximately one-tenth of the Regular Army Medical Corps are diplomats of American specialty boards -- surgeons, internists, urologists, neuropsychiatrists, and so on. Some 330 officers are currently taking training which will lead to certification.

The diversified range of current activities, plus additional opportunities for acquiring advanced skills, now in the planning stage, are aimed at, giving the Army the best trained personnel and the most highly competent medical service in the history of the Medical Department.

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V. Release of New Department of the Army Motion Picture Films

Initial distribution of the following Army Motion Picture Films is being made available to installations in the Far East Command. Distribution of film is made in accordance with recommendations from the Office of The Surgeon General for showings to interested medical personnel.

Professional Medical Film 5047, Shades of Gray (running time, 67 minutes, 6-16 mm print, black and white).

Professional Medical Film 5072, Physical Medicine Service (running time, 16 minutes, 3-16 mm print, black and white).

VI. Supply - An Extract from the Speech "Surgical Service in the Far East Command"
Presented at the 1948 Surgeons' Conference, Far East Command, Tokyo, Japan
by Lt. Col. W. F. Bowers, MC, Surgical Consultant, Medical Section, GHQ, FEC

In visits made to the surgical services of all military hospitals in the Far East Command, one routine matter of investigation concerns alleged deficiencies in standard items of medical supply. At present, the supply situation seems excellent, but, unquestionably, certain items are in theater-wide short supply some times. However, the majority of complaints involve commonly used items which the hospital currently being visited, alone, seems unable to obtain. After investigating these complaints for two years, the following generalizations are presented. The usual point of breakdown in liaison is between the chief of service and the unit medical supply officer. Next most frequent is failure to submit correct requisitions to the depot. Obviously, it is more effective to submit a correct requisition than to have it returned for alteration with the subsequent loss of time. However, in this respect, medical depots have a responsibility beyond returning

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requisitions for correction. In realization of the time-loss factor and that supplies may be urgently needed, the depot can help immeasurably by assisting local supply officers in correcting their procedures. A very common fault is the inadequate requisition and recent examples are the monthly requisition by one hospital of two pairs of size 7½ surgical gloves and one hemostat of a certain type. Without more detail, the following constructive suggestions are offered:

Periodic meetings of medical supply officers within each major command would insure proper and current orientation of all supply officers.

Having medical supply officers speak periodically at staff conferences on supply matters and requisition problems would indoctrinate nurses and doctors with the importance of following correct and effectual procedures.

Cultivating an attitude of greater service to operating facilities by supply agencies. Supplies are of no current value when neatly stacked on warehouse shelves or firmly packed in boxes. Issue of needed supplies to the user is the logical functional attitude.

A continuous flow of information on the arrival of new shipments and supplies from the supply agencies to the operating facilities.

Encouraging conducted tours of the warehouses for chiefs of services at least once a month in order that they may see what items are available for issue. Many instances have been where especially ordered items arrived unknown to the ordering officer and were stored in the warehouse. (An example of this occurred at one hospital where the medical officer stated he was unable to obtain an ophthalmoscope. On subsequent investigation with the supply officer, it was discovered that there were several in the stock room.)

Frequent study of the medical supply catalog by medical officers in order to become sufficiently familiar with the available supplies. This brings realization that substitute items frequently are available. This discussion is a plea for the use of effectual procedure in requisition and issue and for greater cooperation and closer liaison between supply agencies and professional services.

Discussion:

Col. Ward: I'd like to say something along one line and that is on having administrative officers a part of the monthly medical meetings. I was amazed at the interest shown by all officers and the discussions on medical supplies. Our young officers have not been exposed to working with medical supply procedures.

Gen. Bethea: I've found that the difficulty is due to two things - that the doctors don't know how to get supplies. They tend to "grouch" about not having supplies available when the supplies are in the warehouses, and that the supply officer of the hospital does not make frequent and intimate contact with the medical officers. The two should get together on their supply problems.

VII. Chemical Prophylactics

Information is furnished by The Surgeon General that Stock No. 1-384-108 Prophylactic, Chemical, individual, while appearing in the Army-Navy Catalog of Medical Materiel, actually has not been procured for the Army and no stock is available, due to later development of an item now under consideration and service test. In the meantime, Stock No. 1-384-112, Prophylactic, Chemical, individual, 144s, should be used.

VIII. Nurse Examination Board

A retiring board composed of five Medical Corps Officers has been appointed to examine members of the Army Nurse Corps who are directed to appear before the board. The group of examiners

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will meet at the Army Medical Center, Washington, D. C., upon call of the president of the board. Serving on the board are: Cols. Virgil H. Cornell and William W. Nichol; Majs. John S. Paul and Thomas A. Haedicke, and Capt. John G. Wilmer.

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IX. Recent Department of the Army and FEC Publications

- CIR 64, DA, 10 Mar 48. Organization of the Department of the Army.
- CIR 67, DA, 15 Mar 48. Appointment of Professional and Technical Experts or Specialists in the Medical Department Reserve, Except Army Medical Service Corps Reserve.
- CIR 69, DA, 16 Mar 48, Sec VI. Rescission (T/A 8-1037 and T/O 8-1037).
- CIR 72, DA, 18 Mar 48, Sec V. Rescission TM's 8-300, 8-305, 8-310 and 8-320.
- CIR 75, DA & AF (AF Ltr 35-119), 22 Mar 48. General Prisoners (Pertains to Hospitalized Prisoners).
- CIR 81, DA, 24 Mar 48, Sec II. Civilian Employees' Health Service Program.
- CIR 82, DA & AF (AF Ltr 35-103A), 25 Mar 48. Appointment or Enlistment of Military Personnel in the Organized Reserves (Amends Cir 28 (AF Ltr 35-103) DA & AF, 1948).
- CIR 86, DA, 26 Mar 48, Sec IV. Rescission, TM 8-325, 12 Dec 1940.
- CIR 87, DA, 30 Mar 48, Sec I. AR 145-10 (Reserve Officers' Training Corps, Administration and Training) Changed.
- CIR 94, DA, 6 Apr 48. Women's Army Uniform Program (Includes Female Medical Officers).
- CIR 97, DA, 7 Apr 48, Sec I. Circular. Expiration date of Circular 303, 1946 (Physical Reclassification) Extended; Sec II. Deceased and Missing Military Personnel.
- CIR 106, DA, 15 Apr 48, Sec III. Dental Treatment; Sec IV. Globulin, Immune Serum, Human, 10 cc (Medical Item 1-605-505); Sec V. Films - Distributed During March 1948; Sec VI. Greenland - Health Precautions.
- G.O. 24, DA, 10 Dec 1947. Units Entitled to Foreign Decorations (Includes Certain Medical Units).
- G.O. 25, DA, 12 Apr 48, Sec III. Tripler General Hospital, Territory of Hawaii.
- DA Memo 40-1005-4, 25 Nov 47. Quarterly Report of Hospital Costs (Reports Control Symbol MED-42).
- DA Memo 700-10-18, 11 Mar 48. Oversea Command Forecast of Requirements (Reports Control Symbol CSGSP-105(R1)).
- DA Memo 700-50-22, 17 Mar 48. Forecast of Return of Excess Military Property from Overseas (Reports Control Symbol CSGSP-109 (R1)).
- DA & AF Memo 600-750-30 (AF Ltr 35-126), 30 Mar 48. Processing of Applicants For Enlistment (See Par 11 & 12).
- T/A 8-100, DA, 17 Feb 48. Allowances of Medical Expendable Supplies.
- T/A 1-50, D.A.F., 17 Feb 48. Arctic Aeromedical Laboratory.
- T/O&E 17-20-1N, DA, 17 Feb 48. Headquarters and Headquarters Company Combat or Reserve Command, Armored Division, Page 13, Equipment - Medical.
- T/O&E 6-339N, DA, 20 Feb 48. Service Battery, Field Artillery Battalion, 155-MM Howitzer, Tractor Drawn, Sec III, Equipment - Medical.
- T/O&E 8-15N, DA, 27 Feb 48. Medical Battalion.
- T/O&E 8-16N, DA, 27 Feb 48. Headquarters and Headquarters Company, Medical Battalion.
- T/O&E 8-17N, DA, 27 Feb 48. Ambulance Company, Medical Battalion.
- T/O&E 8-18N, DA, 27 Feb 48. Clearing Company, Medical Battalion.
- CIR 15, GHQ, FEC, 13 Apr 48. Monthly Personnel Replacement Requirements.

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CIR 9, GHQ, SCAP, 29 Mar 48. Foreign Quarantine Regulations For Japan.

PART II

TECHNICAL

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X. Lacquer Dermatitis by Captain Stuart H. Walker, MC.
Surgeon, 188th Parachute Infantry, APO 468.

A recent epidemic of a vesicular dermatitis amongst the officers at this post posed an interesting epidemiological puzzle. Within two days, twenty three officers and five dependent wives presented themselves to the Post Dispensary, with skin eruptions marked by vesiculation and edema of the eyelids and wrists. Only officers and their wives were affected, but these persons lived at two different clubs and in the many houses of a dependent housing area. They wore different clothes, ate different foods, and had not been exposed to the same plants.

The eruption was typical of a contact dermatitis: sudden onset, involvement of exposed surfaces, acutely edematous, and vesiculated. In the majority of patients the dermatitis was limited to the wrists and the face. Frequently the vesiculation spread to the dorsa of the hands and to the forearms. All patients showed edema of the eyelids, though, but little if any dermatitis was visible in this area. The edema was extensive in some cases with complete obliteration of the orbital fissure, but always improved towards night fall. Several patients exhibited a generalized reaction with involvement of the trunk, genitalia and lower extremities, in addition to the wrists and face. These generalized cases showed a persistence of the lesions for from seven to ten days, while the average case cleared in from four to five days. One dependent wife had a severe reaction with universal involvement, extensive edema of face and extremities, and large areas of vesiculations and oozing which necessitated hospitalization. A moderate eosinophilia of from 3 - 6% was found in all patients examined.

When it was discovered that four of the five bartenders at the Officers' Club Bar were severely involved with the same condition, the solution became apparent. The common denominator was lacquer, freshly applied to the bar prior to a Saturday night dance. The four bartenders who had polished the bar Saturday afternoon were most affected, but most of those officers and wives who leaned against it that night also reacted. The incubation period was from 24 to 72 hours, the majority of the patients exhibiting the beginnings of contact dermatitis Monday morning. With removal of the offending bar, no new cases have appeared. Patch test of the lacquer applied to patients exhibiting the contact dermatitis all gave positive results.

Lacquer dermatitis is as well known to the Orient as poison ivy dermatitis is to America. Workers in lacquer factories commonly have swollen eyes and vesiculated hands. The toxicity is due to the content of urushiol in the lacquer, (the same oil present in poison ivy and sumac) and is greatly lessened by drying and oxidation. From 60% to 80% of the people in the United States have been known to be sensitive in varying degrees, to this oil. Several enlisted men of this command contracted the dermatitis from the lacquer tree itself during the summer, and last year an epidemic of contact dermatitis of the buttocks amongst men of a rifle company was discovered to be due to newly lacquered toilet seats.

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The large proportion of persons sensitive to lacquer and the severity of the reactions indicated a need for reporting lacquer dermatitis to those unfamiliar with its manifestations.

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XI. A Review of Rickettsial Diseases and Report of a Typhus Epidemic by 1st Lt. George H. Gray, Jr., Chief of Laboratory Services, 28th Station Hospital, Osaka, Japan.

The field of rickettsial diseases may be classified as a new field of medicine. It is only in recent years that much conclusive evidence has been accumulated about these diseases and there is much work still to be done before our knowledge is completed. Wolback, a noted researcher in rickettsial diseases, has called them the most complex of any of the infectious diseases of man, and this is definitely not an over-statement. In military practice, especially after a war, the rickettsial diseases assume a role of major importance. The technique of immunization now used by the armed forces has greatly reduced this problem among our troops, but the problem is still great in the civilian population. Crowded conditions, poor nutrition, poor hygiene, poor sanitation ... all these contribute to the spread of rickettsial diseases for wherever the combination of man, rodents, and ectoparasites common to both exist, there rickettsial diseases exist.

It would be impossible to cover the whole field of rickettsial diseases and their ramifications in this short paper. Our purpose is to analyse the recent typhus epidemic in Osaka - its etiology, symptomatology, mortality, and laboratory findings.

For much of the following data I wish to express my gratitude to Dr. Kumagai, the Chief of Public Health in Osaka, and to Capt. Neller and the Military Government Team in Osaka. The reports of the complement-fixation and differentiation of murine and epidemic typhus were done and compiled at the 406th General Medical Laboratory in Tokyo. The Weil-Felix reactions were done at the 28th Station Hospital.

I wish to state that the numbers appearing in this paper are as accurate as we can determine in analysing Japanese reports and correlating them with our own. There is probably a slight variation either side of the given figure but for all practical purposes they are accurate.

Of the 70 cases recently seen in Osaka on which a working diagnosis of typhus was made, 60 were proven typhus, three remain in doubt at the present time, six were proven not to be typhus, and one remains undiagnosed. Of the six non-typhus cases, one was measles, one was bronchitis, one pharyngitis, one malaria, one encephalitis, and one septicemia. In the three doubtful typhus cases a clinical diagnosis of typhus has been made and it awaits serological confirmation.

In the cases in which serological data is present, five cases were definite murine and five probably murine; 32 are proven epidemic and five probably epidemic. Nine cases of the first ten were diagnosed as murine by the Japanese. We have no serological data on these cases and they are not included in the above analysis. In view of the spread of the epidemic and the fact that case numbers 11 to 29 were all proven epidemic typhus it is probable that these nine cases were louse-borne rather than murine in type. This would make the total number of epidemic typhus cases to 47 against ten murine. The murine cases are mostly among the last 20 cases reported, suggesting that the louse-borne typhus is now pretty well controlled. The murine cases are filtering into the Momoyama Hospital at a rate of one to two a week.

The case which we can establish fairly definitely as the initial case of this epidemic was one -- Toyoko Nakatani, who fell ill at the beginning of November while working in a rag factory in Osaka. He died on 14 November 1947. The diagnosis at the time of death was meningitis. About the beginning of December many of Nakatani's friends and many who attended his death watch were found to be getting the same disease. Two of the family became ill and became OX positive on the 7th of December 1947. The information on case numbers two to ten is rather meager, but they were in contact with Nakatani during his illness. Case numbers eleven to 42 can be fairly definitely traced and they are all connected in some way to Nakatani, with the exception of cases number 37, 38, 39, 40, and 41 which came from Wakayama and no definite connection with Nakatani can be established. Case number 11 was at Nakatani's death watch. He had lice and became ill on 7 December. In like manner, cases number 13, 18, 24, 30, 33, 34, and 42 bathed in Shusse bath and came down with typhus of the epidemic type. Cases number 14, 15, 16, and 17 attended the death watch of Toyoko Nakatani. They developed epidemic typhus. Cases number 25, 26, 27, 28, and 29 visited Nakatani, had

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lice and developed epidemic typhus. Case number 27 died. Case number 20 worked opposite Nakatani and developed epidemic typhus on 10 December and died 18 December 1947. Cases number 23 and 24 were connected with Nakatani and both died of epidemic typhus on 23 and 26 December 1947 respectively. The source of infection after case number 42 is uncertain. The early cases are fairly well localized. They are preponderantly epidemic and probably all epidemic in nature. The later cases are beginning to show a wider range of infection sources and as the epidemic progresses these become more indistinct and harder to trace. Typhus spreads rapidly along the lines of least sanitation and heavy population and unless discovered and controlled early the original source is soon lost and many foci of infection arise. This epidemic was controlled early by the immediate and excellent work of the Military Government Team of Osaka, by rat control, DDT spray, mass vaccination, and improvement wherever possible of personal hygiene.

A closer analysis of the epidemic reveals the following fact: As closely as we can determine, nine of the cases of typhus died. Of these five were definitely louse-borne typhus, four were diagnosed as murine. Of these four, three were of the first ten cases and in all probability were louse-borne and not murine in type. The other case was probably murine typhus.

The age of the patients varied from 7 to 66 with the average falling between 25 and 30 years of age.

The average days of illness of the surviving patients was 26 and varied from 13 to 44 days. The time between the onset of symptoms and clinical diagnosis varied from one day to 16 days with an average of eight days elapsing before the diagnosis was made. The total time from onset symptoms with discharge from hospital averaged 34 days.

The presenting symptoms at the time of initial examinations were classical. In 95% of the cases the presenting symptoms were chill, fever, headache, and lumbago of sudden onset. The chill varied from a shivering sensation to frank rigor. The headache was generally frontal and quite severe. The fever ranged from 99° to 103° with an average of 101°. The lumbago was usually marked and the patient had difficulty of movement. The other symptoms exhibited in a smaller number of the cases some in conjunction with the above and others separate were lethargy, tinitis, GI symptoms, coma-delirium, sore throat, and hacking cough.

The physical findings varied with each case but the vast majority showed varying stages of dehydration, appeared acutely ill and were quite restless.

Exanthem was noted in 61 cases out of 63 diagnosed. It varied in location from generalized to small areas on the chest and extremities and was constantly petechial in character.

Of the 61 cases proven to typhus 44 had received no vaccine at any time while 17 were vaccinated. The dates of vaccination in these 17 cases varied from two weeks to 12 months previous to the date of onset of symptoms of typhus. The mortality of the unvaccinated cases were eight out of 44 or 18% while in the vaccinated group one death occurred in the 17 cases. This individual received his vaccination eight months previous to the onset of symptoms. This illustrates the importance of booster shots and constant vigilance to assure the individual of an adequate antibody level to combat typhus. Contrast these figures with our own troops in which no typhus was found. Also with the severe epidemic of 1945 here in Osaka where one soldier developed typhus after working in typhus area for several weeks and then had a mild attack from which he recovered uneventfully.

It is interesting to note the type of treatment the patients received in the Japanese hospital. They were placed on an isolation ward. Isolation is merely a word in this instance. Masks, caps, and gowns were worn by the attending nurses and doctors sometimes. The patients' family was in the room devoid of any precaution and constantly travelled in and out of the hospital while taking care of the patient. There was no heat, and sanitary measures were inadequate. The medical care consisted of subcutaneous and intravenous saline injections containing vitamins B and C. This therapy was inadequately carried out. Most of the patients were dehydrated on admission and remained so during their hospital stay. Another therapeutic measure was the intramuscular injection of camphor resulting in the sores looking arms I have seen in a long time.

From the laboratory standpoint approximately 50 cases were confirmed by the complement-fixation reactions performed at the 406th General Medical Laboratory in Tokyo. Thirty-four positive

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Weil-Felix reactions were obtained of 44 cases studied by this method. Of the patients giving no or low titer Weil-Felix reactions four died. These cases were proven typhus by the complement-fixation reactions. Results of the acid-turbidity reactions, as reported by Dr. Kumagai, of Momoyama Hospital gives a very high percentage of positive results especially early in the disease.

Summary: (1) Typhus is ever with us here in Japan. The conditions aiding spread of the disease are here. We must be aware of this threat and be on guard to stop it early whenever it appears. (2) Preventive vaccine is a must in the control of typhus and is of greatest value when booster shots are given to maintain an adequate antibody level against typhus.

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XII. Nursing Requirements of the Surgical Patient by Colonel Norman W. Anderson, MC, Chief of Surgery, 49th General Hospital, APO 1052, Tokyo, Japan.

In the past decade there has been an increasing appreciation on the part of the medical professional of the importance of surgical physiology. Time spent in the pre-operative evaluation of the surgical patient as to his state of physiological equilibrium has reduced markedly not only the morbidity but the mortality.

All of us are familiar with the patient whose blood pressure and pulse become imperceptible late or even early in the course of a surgical operation and who required heroic amounts of plasma and blood to avoid a catastrophe. We are also familiar with the patient who was admitted to the hospital the evening before operation in a state of poor nutrition, was operated upon, did well for two or three days postoperatively, and died. Much of this can and should be avoided by proper evaluation of the patient.

The big five requirements of the surgical patient are: water, electrolytes, calories, proteins, and vitamins.

Water Balance. A thorough understanding of certain fundamental factors involved in the maintenance of normal fluid is essential to the proper evaluation of chemical changes that occur in the body under abnormal conditions. Water constitutes approximately 70% of the body weight and averages close to 70% of the total weight of food ingested. In addition, water is formed when protein, carbohydrates, and fat are oxidized into energy. For each Gram of food eaten the body is furnished 0.9 Grams of water. Even during starvation as much as 500 Grams of water is made available from the body material used for energy.

There are three main compartments of the body related to water balance, the vascular, interstitial, and intracellular. Normal fluid balance must be maintained in the vascular compartment at the expense of fluid in the other two compartments. The water in the interstitial compartment exhibits a wide range of adjustability in defense of the blood plasma. When the interstitial compartment expands beyond its normal limits, a state of edema occurs, and when it is depleted below normal a state of dehydration occurs.

In a normal individual from 3-8 liters of fluid are excreted by saliva, secretions from the stomach, intestine, pancreas, and liver bile. These are reabsorbed into the plasma and 1-8 liters excreted as urine, fluid of feces, insensible cutaneous loss, perspiration, respiration, and in the milk of lactating mothers. A total fluid turnover therefore, of from 4-16 liters is accomplished in a circulating medium of plasma which averages about 3500 c.c. This phenomena is known as body water economy.

Surgically we are interested in the fluids lost from the body. From 2-5 liters of fluid can be lost in a twenty-four period from perspiration through the sweat glands, depending on the temperature and humidity; from insensible cutaneous loss, that fluid necessary for the dissipation of body heat through the mediums of radiation, conduction and convection; and from insensible loss from the lungs by vaporization and respiratory exchange of carbon dioxide and oxygen. Insignificant amounts of fluid are lost from the feces except during periods of diarrhea. Wastes excreted from the kidneys are markedly affected by the amount of water intake and amount of wastes presented to them, left over after other body physiological processes have been cared for. The normal kidney excretes about 35 Grams of waste material a day which it can do in only 500 c.c. of urine. If there is a kidney damage and the concentration of urine ranges between 1.010--1.014 approximately 1500 c.c.

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of urine will be required to excrete the 35 Grams of body waste. Urine volume excretion for a 24-hour period is important and unless we are certain that the kidneys have a normal function, a urine output of less than 1500 c.c. should cause us some concern. The greatest amount of fluid, in a surgical patient, is lost during operation and the four-hour period following operation. It has been ascertained that 700 c.c. of each 1000 c.c. of fluids lost during this period was due to evaporation. It is therefore important to do away with the so-called "ether bed."

The uncomplicated surgical case requires from 2500--3000 c.c. of water daily for water of urination and for water of evaporation to replace water lost from the skin and lungs. The complicated surgical case has an additional item called "X" which is water necessary to replace fluid lost by vomiting, aspiration from an in-lying duodenal tube, drainage from biliary and intestinal fistulae, diarrhea, blood loss, and fluid loss from exudate from areas of increased permeability, such as inflammation and burns. This item "X" must be carefully measured and recorded and added to the total fluid that would otherwise be required for an uncomplicated surgical case.

Fluid requirements of the surgical patient can be ascertained by several means: (1) An accurate intake and output chart; (2) Comparative haemoglobin, red-cell count, and hematocrit, the later being accurate within 2%; (3) Record of urine output both as to volume and specific gravity, and (4) Weighing of the patient. This last method is the most accurate and patients can be weighed within 100 Grams of accuracy. It is based upon the knowledge that 1 liter of water at 4 degrees centigrade weighs 1 kilogram. If a patient shows a gain in weight over the previous day he is retaining fluids above the normal requirement and if he shows a decrease in weight the daily fluid requirements have not been met.

Electrolytic Balance. This subject deals with the acid base equilibrium of the body and is intimately related and affected by losses incident to starvation and dehydration. Disturbances of the Ph of blood are incompatible with life, and small variations result in alkalosis or acidosis. The Ph of the blood is controlled by certain buffers, by the respiratory exchange rate of carbon dioxide, selective tubular absorption, and excretion of certain acids and bases by the kidneys. For practical clinical purposes the total electrolytes of the blood and interstitial fluid consist mainly of sodium in the form of sodium bicarbonate and sodium chloride.

The stomach secretes hydrochloric acid and when vomiting occurs water and chloride ions are lost. The sodium ion which was attached to the chloride ion is momentarily unattached and combines with the bicarbonate ion, and a condition of alkalosis or alkalemia exists. The blood plasma in alkalosis has a Ph above its normal of 7.4 so that the carbon dioxide combining power will be elevated. With dehydration there occurs oliguria and with the latter a retention of waste material shown by an increase in the urea, the so-called "extra renal azotemia." The sequence of events, therefore, from protracted vomiting is dehydration, hypochloremia, alkalemia, oliguria, and extra renal azotemia.

The treatment prescribed for the correction of alkalosis is intravenous normal saline solution, since the primary change is loss of the chloride ion. The restoration of the chloride ion to the blood plasma decreases the alkalemia and aids in reestablishing normal renal function. In the administration of normal saline we also introduce the sodium ion, so that excess sodium ion may be slowly excreted and reduction of the carbon dioxide combining power may return gradually. Recently in some clinics ammonium chloride has been prescribed to alter the alkalemia without introducing the sodium ion.

In starvation, diabetes mellitus, and diarrhea attending lesions of the ileum and colon, the base ion sodium loss predominates over the acid ion and we have a condition known as acidosis. Here again we have retention of acid catabolites from impaired renal function and oliguria and extra renal azotemia exists. In this condition the chloride ion is not reduced very much so that the administration of normal saline solution is not good therapy. If we give normal saline it will force the chloride ion in the blood higher and further reduce the carbonate ion.

The treatment prescribed in acidosis is the administration of molar lactate solution which is readily oxidized to bicarbonate relieving the acidosis. The so-called "Lactate-Ringer's" solution was supposed to supply certain essential electrolytes of intracellular tissue metabolism which were depleted in acidosis, such as the potassium, magnesium, and calcium ion, but they are present in this solution in such small quantities that it has not been found efficacious and gives a false sense of security.

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In both acidosis and alkalosis there is present a ketosis which is corrected by the concomitant administration of glucose. For example, in alkalosis we administer a 5% glucose solution in normal saline.

There is present today on the supply catalog for intravenous use solutions of distilled water which should never be administered without the addition of 25 and/or 50 Grams of glucose. The administration of pure distilled water is dangerous and will cause laking of the red blood cells.

Normally five to ten Grams of sodium chloride are excreted in the urine daily. The average sodium chloride lost in perspiration is three Grams per liter. Average sodium chloride lost in duodenal drainage is five to six Grams per liter. Sodium chloride is a threshold substance and amounts not needed are excreted by the body. In patients with a poor cardiac reserve or with kidney damage there is a lag in sodium chloride excretion and an excess administration may invite pulmonary edema. Excretion of 2-3 Grams of sodium chloride in a 24-hour urine specimen suggests satisfactory chloride balance providing the volume is sufficient. The electrolytic balance can also be obtained by checking the serum chloride, carbon dioxide combining power, urea nitrogen, and fluid balance. It is important to remember that for each 9 Grams of sodium chloride administered beyond the body needs, if not excreted by the kidney or sweat glands, the patient will gain 1 kilogram of weight. The Ph of the urine should not be taken as an index of acidosis or alkalosis as renal infections render the urine alkaline in acidosis. In the dehydration of alkalosis the urine may be acid if the cat ions or sodium ions concentration of the plasma is below normal, which is not infrequent.

In an uncomplicated surgical case on parenteral therapy only, fluid and electrolytic balance is usually maintained by prescribing every 8 hours, alternately, 5% glucose in normal saline and 5% glucose in distilled water. By this regime the patient receives a total of 9 Grams of sodium chloride one day and 18 Grams of sodium chloride on alternate days. We have found no ill effects from this standardized procedure.

The utilization of unrelated units of concentration makes visualization of acid-base balance impossible and renders thinking difficult. We express serum carbon dioxide combining power in volumes percent, plasma chloride in milligrams percent, and normal saline in grams of physiological solution. For this reason there has been a recent trend to express all units in the same chemical terms, using a single chemical equivalent as unit concentration or ionic equilibrium. This unit is milliequivalents per liter. This expression of milliequivalents per liter allows diagramatic visualization of the disturbances in balance of cat and an ions, thereby greatly facilitating comprehension of the pathologic physiology. Equivalent is the weight of an ion which in neutralization reaction is equivalent to 1 Gm-Atom of hydrogen. Thus the milliequivalent per liter is equal to the milligrams per liter times the valence over the atomic weight. To reduce volume percent of carbon dioxide simply divide by 2.3 and one has the milliequivalents of HCO_3 per liter. In normal plasma the sodium ion is represented as 138 milliequivalents, the bicarbonate ion as 26 milliequivalents and the chloride ion as 103 milliequivalents.

Caloric Requirements. Until recently except for the giving of glucose to avoid ketosis little interest was taken by the surgeon in meeting the caloric requirements. Practically none was given for the maintenance of nitrogen equivalent.

An adult of average size in bed requires about 1600 calories a day. If calorogenic food is not administered he will obtain calories from body tissue. The glycogen stored in the liver will be depleted in 1-2 days, after which calories for body nutrition will come from the proteins and fat of the body. Elman has concluded from experimental study that the administration of 100 Grams of glucose daily to the average adult is adequate to prevent utilization of protein from the tissue. This is known as "the sparing action of glucose."

Protein Requirements.

Muscle contains about 20% of weight of good protein and forms a large part of the body protein. From 1-2 kilograms of proteins are stored in the liver but in starvation are depleted in 1-2 days. The daily requirement of protein is 1 Gram per kilogram of body weight. This implies protein with all essential amino acids. Fever, trauma, and infection cause excessive amounts of protein tissue breakdown and raise the daily requirements of protein to 2 or 3 times the normal amount. Correction of protein deficiencies require longer periods to correct than water, electrolytic, and

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Vitamin deficiencies. For each Gram of plasma protein elevation 30 Grams are required for tissue protein so that correction of hypoproteinemia is often a slow process when evaluated by gain in the plasma protein level.

It is hazardous to subject a patient who has sustained large weight loss to a formidable operation after mere restoration of water, electrolytic balance, and adjustment of hemoglobin to satisfactory level, even though the blood plasma protein value is normal. It is better to learn from the patient the period of starvation. This percentage loss of body weight serves as a satisfactory base line from which to project length and extent of pre-operative preparation.

It has been observed in chronic wasting diseases, such as carcinoma and diarrhea, that there are extensive fatty changes in the liver. This means that the liver parenchyma has been destroyed and hepatic dysfunction exists. This is of great prognostic significance and its correction prior to surgery is mandatory. Proper protein and carbohydrate metabolism is essential for recovery of the surgical patient.

One of the most important functions of plasma protein is the maintenance of the colloidal osmotic pressure of the blood plasma. With reduction in plasma protein, especially the albuminous fraction, the colloidal osmotic pressure is reduced, because the plasma loses its ability to hold water. Although other proteins, such as the globulin and fibrinogen fraction, elements are increased in attempt to compensate for the reduction of the albumen fraction they fail to properly compensate since their molecules, being larger, are unable to hold sufficient water and clinical edema results.

A Hypoproteinic state results in (1) reduction of the colloidal pressure of the blood and a decreased tolerance to shock producing circumstances, (2) delayed wound healing and wound disruption because the velocity of fibroblastic growth is reduced, (3) delayed intestinal mobility, even causing obstruction and edema of anastomotic stoma, (4) production of a fatty liver with attending hepatic dysfunction, and (5) chronic anemias which require protein as well as iron.

It is important, therefore, to supply to patients on parenteral therapy more than twenty-four hours not only glucose for caloric requirements but also proteins. In this theater this can be accomplished by the administration of plasma, whole blood, and serum albumen since hydrolysates of casein, the commercial amigen, and paralbumin are not available.

When patients have had excessive weight loss it is essential to prepare them for surgery by the administration of a high protein diet. Using the percentile loss of weight as a base line, at least 120 Grams of protein are administered daily for each percent of body weight loss. If a 30% weight loss had occurred a high protein diet is administered pre-operatively for 30 days. The so-called Varco Diet is used at this hospital and contains 2460 calories and 120.2 Grams of protein to each 1500 c.c. of feeding.

Vitamin Requirements. It is a well known fact that sailors at sea who developed scurvy saw their old wounds opened up that had been healed for many years. Vitamin "C" is therefore essential for wound healing as it increases collagen fiber formation. It is a soluble vitamin and must be administered in divided doses daily. A total daily dose of 200--500 mgms. is usually required.

Vitamin "B" Complex influences the conversion of carbohydrates, helps correct gastrointestinal disturbances by increasing intestinal motility, and prevents cardio-vascular disturbances, such as congestive heart failure. It is usually prescribed in 50 mg. dose once daily.

Vitamin "K" is required for certain blood dyscrasias incident to surgery.

General Comment. A comprehensive consideration of The Requirements of the Surgical Patient is beyond the scope of this paper, but certain fundamental factors have been discussed.

It is hoped that this article will stimulate further study on this important subject and leave the nurse with a definite feeling that she plays a most important part in contributing to the recovery of the surgical patient.

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XIII. Cardiolipin in the Kolmer Technic by 1st Lieut. Louis H. Muschel, MSC,
Laboratory Department, 20th Station Hospital (PS), APO 74.

The cardiolipin antigen has been employed experimentally for several months at the 20th Station Hospital in the Kolmer technic and the results obtained compared with the results obtained with the beef heart extract antigen supplied by the Army Medical Department Research and Graduate School. While the reactions have been in close agreement in over 300 comparative tests, certain significant differences have appeared. With respect to sensitivity, the cardiolipin antigen compares favorably with the older antigen. Most noteworthy, in several cases with positive darkfield results, it gave a positive reaction prior to the standard antigen. In old treated cases, it often shows greater reactivity than the standard antigen. A greater specificity has been assumed for a purified antigen such as cardiolipin. Most of the reports in the literature have indicated that it will provide a test of greater specificity. A recent report from the Naval Medical School (1), however, has indicated that in some patients with malaria, a non-specific reaction may be obtained with the cardiolipin antigen whereas such reaction is not obtained with the standard Kolmer antigen. Several such reactions have been obtained at the 20th Station Hospital on sera from patients with vivax malaria. The Kahn and standard Kolmer tests have been negative, but slight reaction were obtained with the cardiolipin antigen. A different pattern of reaction was obtained in one patient with falciparum malaria. A transient reaction was obtained in the Kahn test attaining a level of 8 Kahn units, but the Kolmer test was persistently negative with both antigens. Another patient admitted because of hemorrhoids with no history or symptoms of syphilis gave the following reactions:

<u>Dates</u>	<u>Kahn</u>	<u>Standard</u>	<u>Kolmer.</u>	<u>Cardiolipin</u>
17 September 1947	-	2 +		4 +
29 September 1947	-	1 +		3 +
17 October 1947	-	-		2 +

In tests on cerebrospinal fluid, since the phenomenon of non-specific fixation with guinea pig serum does not occur with cardiolipin antigen, the pretesting of guinea pig serum and/or the use of egg saline is not necessary when cardiolipin antigen is used.

This is a preliminary report. Additional data is being accumulated.

Reference. 1. STOUT, G. W. Reactivity of Tests using cardiolipin antigens in a limited number of nonsyphilitic cases. Am. J. Syph., Gonorr. and Ven. Dis., 31:3, 1947.

COMMENTS. (Harvey R. Livesay, Colonel, Medical Corps Commanding, 3rd Medical General Laboratory, APO 900) "This laboratory has used the cardiolipin antigen mentioned in Lt. Muschel's report. It was employed in a macroprecipitation test for syphilis on 416 serum samples. Results were compared with those of the standard Kahn and Kolmer techniques performed on the same samples and are tabulated below:

<u>Test</u>	<u>Positive</u>		<u>Doubtful</u>		<u>Negative</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Kahn	196	47.1	92	22.1	128	30.8
Cardiolipin	145	34.8	12	2.9	259	62.3
Kolmer	147	35.3	9	2.2	260	62.5

While it appears from these data that there is a closer agreement between the results of the cardiolipin and Kolmer tests than there is between the results of the cardiolipin and Kahn, or between those of the Kolmer and Kahn, we avoided drawing the suggested conclusion that the cardiolipin antigen is more sensitive than is the standard Kahn antigen. We did not draw this conclusion because we feel that the results are not definite enough and that this represented an inadequate number of examinations to publish as a study of these agents.

So with Lt. Muschel's paper. Though his work differed from ours in that he employed the cardiolipin antigen in a complement-fixation test rather than a macroprecipitation test, he appears to have collected too few cases to be of significance. If he were to tabulate the results of a larger series of tests, the information may prove to be worthy of publication. In the discussion of the test on malaria patients particularly, the results seem to confuse rather than clarify our knowledge of this new antigen."

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COMMENTS. (George N. Schuhmann, Colonel, Medical Corps, Preventive Medicine Consultant, General Headquarters, Far East Command, APO 500) "I feel that Lt. Muschel's paper is of considerable value, particularly at this time of the year when cases of malaria may develop in some areas of the Far East Command, and a mistaken diagnosis of syphilis may be made unless utmost care is exercised. It stresses the point which must always be stressed; i.e. the clinical, as well as the laboratory, results must be carefully considered in making the diagnosis of syphilis. A single positive serological test requires careful follow-up, not only to include further laboratory studies, but a careful history and clinical evaluation to be coordinated with the laboratory work. I cannot overemphasize the fact that a diagnosis of syphilis cannot be made on one, or even two, positive serological tests unless there is definite evidence in the history or clinical findings to support it. On this basis, I feel Lt. Muschel's paper is timely and constructive. Admittedly, his data is limited, but not the warning, or rather the lesson, it teaches in the diagnosis of syphilis. I hope Lt. Muschel will continue to compile his data and republish the total at a later date."

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XIV. Advance Copy of TB MED 196

Pending publication of new TB MED 196 (Management of Gonorrhea) the advance copy is reprinted herewith for information and guidance.

TB MED 196

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

MANAGEMENT OF GONORRHEA

Department of the Army, Washington 25, D.C.

January 1948

This Technical Bulletin supersedes TB MED 196, 20 August 1945.

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1. GENERAL

Gonorrhea is the most prevalent venereal disease among Army personnel. Although penicillin is a specific in the treatment of the disease, difficulty is allegedly encountered in curing many cases with the drug. In such instances careful observations usually reveal that the patient has been reinfected or is suffering from a urethritis of non-gonococcal origin. A most important factor in accurate diagnosis and treatment of gonococcal infection is a dependable laboratory with a technical staff so trained that they are familiar with the pitfalls of the Gram stain. Not infrequently has an erroneous diagnosis of gonococcal infection been made on the basis of an unsatisfactory Gram stain.

2. DIAGNOSIS

(a) In the Male:

(1) The clinical diagnosis of gonococcal urethritis is based upon a urethral exudate, burning on urination and frequency of urination. Verification should always be made by means of approved laboratory procedures.

(2) The laboratory diagnosis is dependent upon the demonstration of Gram negative diplococci in films prepared from a urethral exudate, and/or the presence in cultures of oxidase-positive colonies composed of organisms with morphology typical of the gonococcus. The cultures should be made from the urethral exudate. In special instances, cultures from urine sediment or from prostatic secretions may be employed. Specimens from the latter two sources are less satisfactory.

(b) In the Female:

(1) The clinical symptoms of gonorrhea in the female are notoriously unreliable as a basis for diagnosis. Asymptomatic carries of the disease are not infrequent. Laboratory aid is of paramount importance. Inasmuch as films detect only approximately half of the cases, the necessity for employing cultures as a routine measure is evident.

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(2) Comparative studies have shown that files and cultures from the cervix only are indicated, inasmuch as duplicate specimens from the urethra practically never reveal the gonococcus when it is not present in the cervix. The diagnosis of gonorrhea in the female is therefore made upon demonstration of the gonococcus in films and/or cultures from the cervix.

(c) It must be remembered that *Neisseria* other than the gonococcus may occur in the genito-urinary tract of both sexes and must be differentiated from the gonococcus. Thus final identification of the organism by means of carbohydrate fermentation must be carried out when correlation of the clinical and laboratory data is in doubt.

3. LABORATORY PROCEDURE

(a) Specimens should be collected from the male anterior urethra or from the cervix by means of a sterile, cotton tipped applicator. These applicators are made by tightly winding a small amount of absorbent cotton around the terminal 3/4 inch of a 6 inch wooden applicator. The diameter of the swab should not exceed 1/8 inch so that it may be easily introduced well within the anterior male urethra.

(b) Films:

(1) To prepare a suitable film, the exudate which has been obtained on a sterile swab is "rolled out" over the surface of a glass slide by rotating the cotton tipped applicator. This "rolling" procedure is superior to rubbing the swab over the surface because the pus cells remain intact and more gonococci retain their intracellular position.

(2) Thick films are unsatisfactory and can be avoided by collecting only a small amount of exudate and by rolling the swab over the surface of the slide but once. When the film has been air dried it should be stained by Hucker's modification of the Gram stain, using 95% alcohol to decolorize rather than a mixture of acetone and alcohol.

(3) Individual staining of the films should be encouraged, particularly in laboratories where expertly trained technicians are not available. Overdecolorization as a frequent source of erroneous diagnosis should be stressed.

(4) On microscopic examination, when correctly stained, the nuclei of the pus cells should retain some of the violet dye, while the cytoplasm appears pink. If this is not the case, overdecolorization has occurred and the film is usually unsatisfactory.

(5) The gonococcus is typically Gram-negative when correctly stained and appears as a pink or orange-red coccus, usually arranged in pairs. The organisms may be inside or outside of the pus cells. The intracellular location is typical and has considerable diagnostic significance. Extra-cellular gonococci, as a rule, are found frequently in films prepared from the cervix.

(c) Cultures:

(1) To prepare satisfactory cultures, the exudate which has been obtained on a sterile swab should be inoculated directly on to a freshly prepared chocolate agar plate. Incubation should be carried out at 36° C for 24 hours in an atmosphere containing from 8 to 10% carbon dioxide. This can be easily accomplished by placing a short lighted candle on culture plates in a wide mouth, air tight jar and replacing the lid. When the flame is extinguished by depletion of oxygen, the concentration of carbon dioxide varies from 5 to 10%.

(2) Chocolate agar should be used for culturing the gonococcus. The medium described below has been found to be most satisfactory for this purpose.

Double strength agar base.	Grams per 100 ml
Proteose-peptone No. 3	3.0
Corn starch	0.2
Sodium chloride	0.5
Dipotassium phosphate	0.8
Monobasic potassium phosphate	0.2
Agar	2.0
Double strength hemoglobin solution.	
Bacto-Hemoglobin	2.0
Cold distilled water	100.0

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Place the hemoglobin into a dry flask shaking vigorously until dissolved. Sterilize the above solutions to 50° C. and add aseptically 2.0 ml of Bacte-Supplement B* to each 100 ml of double strength agar. Mix well, add an equal volume of the hemoglobin solution. Mix again and distribute into sterile petri dishes.

Best results are obtained if the medium is prepared in advance so that the surface is dry before inoculation. Do not prepare more plates than can be used before drying becomes excessive.

After 24 hours incubation of the inoculated plates, the cultures should be inspected and oxidase reagent applied to suspicious colonies. Films should be prepared from those colonies which are oxidase positive and stained by Hucker's modification of the Gram stain.

4. TREATMENT

(a) Penicillin will be used in the chemotherapy of gonorrhea. In uncomplicated cases treatment will be administered as an out-patient or dispensary procedure, except when satisfactory facilities are not available.

(b) However, penicillin should not be employed in those patients with gonorrhea who also have lesions suspicious of syphilis until after the diagnosis of syphilis has been verified or ruled out by appropriate laboratory tests. Such patients will be hospitalized, and if found to be negative on darkfield examination for three consecutive days, as well as serologically negative, treatment for gonorrhea will be instituted as outlined in paragraph (c) below. The follow-up on patients in this category should be methodical and scrutinizing and should consist of a weekly physical and serological examination for the first 30 days, monthly thereafter for the following 5 months.

(c) The initial treatment schedule of choice is a single intramuscular injection of 300,000 units of crystalline penicillin G in oil and wax (P.C.B.).

(d) Patients in whom a favorable response is not evident by the third post-treatment day, as determined by change in character or disappearance of the discharge and the absence of gonococci by smear or culture, should be retreated, using the schedule recommended in (c) above.

(e) If symptoms persist after re-treatment, the patient should be hospitalized and further bacteriologic studies carried out. If the signs and symptoms are definitely established as due to gonococcal infection and complicating factors ruled out or removed, an additional course of 300,000 to 600,000 units of penicillin in oil and wax will be administered by intramuscular injection.

(f) Individuals with complication of gonorrhea, such as epididymitis, prostatic abscess, salpingitis, arthritis, ophthalmia, or septicemia, should be hospitalized immediately and treated in consultation with appropriate specialists.

(g) No authentic penicillin resistant strains of the gonococcus have been detected by in vitro tests, and it is doubtful that uncomplicated gonococcal infection fails to be cured with the above amount of penicillin therapy.

5. DETERMINATION OF CURE

Relapses following adequate penicillin therapy are rare. A serous or mucoid exudate with a few pus cells may continue for several days after treatment. Re-treatment is unnecessary unless the gonococcus is again demonstrated in films or in cultures from the exudate. In view of the extreme rarity of demonstrated penicillin-resistant gonorrhea and the excellent results of the treatment system recommended above repeated tests of cure are not obligatory in male or female patients.

6. POST TREATMENT MANAGEMENT

(a) Individuals who have undergone treatment will be placed in working quarantine in compliance with paragraph 1b(5), Section IV, WD Circular 227, 20 August 1947.

(b) It is particularly important that patients with gonorrhea be carefully examined for evidence of primary syphilis and other venereal diseases. A serologic test for syphilis should be done at the beginning of treatment for gonorrhea, and material from penile lesions, if they exist, should be studied by darkfield examinations. If gonorrhea and early syphilis the latter even in

*Supplement B will be purchased until available in the Supply Catalogue.

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its incubation period coexist a febrile Herheimer reaction may follow the first dose of penicillin. Since penicillin in adequate dosage is therapeutically effective in early syphilis as well as in gonorrhea, it is possible that the development of primary syphilis may be retarded or masked by penicillin therapy of gonorrhea. Blood tests and clinical examination for syphilis should be performed 30 days following treatment; the patient should be warned to report promptly if lesions suspicious of primary or secondary syphilis develop; and careful clinical and serologic study should be repeated once a month for 6 months. (Serological examination for the first 30 days and monthly thereafter for the following 5 months equals the 6 months shown in previous sentence, see paragraph 4(b). - Editor's Note)

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XV. Medical Treatment of Peptic Ulcers by Sam A. Overstreet, M.D., Associate Professor of Medicine, University of Louisville, Kentucky. In Two Parts. Part I.

Treatment of gastric and duodenal ulcer may be generally considered as one subject since almost identical measures apply to both. In either case the end in view is threefold - first, to secure relief from the pain or symptoms which brought the patient to seek medical aid; second, to procure complete healing of the lesion; and third, to prevent recurrence. Relief of pain is usually easy of accomplishment within one to three weeks after adequate treatment is instituted. Firm healing of the lesion may be expected in about three months. The probability of recurrence depends upon many factors and requires a long-range plan of management.

The diagnosis of peptic ulcer entails usually elements of relief and anxiety in the patient's mind - relief to be assured his trouble is not cancerous as he usually suspects and anxiety because he has learned of some of the complications known to arise from ulcer. A frank discussion and explanation by the physician becomes therefore the first requisite of treatment in order that the patient may understand and cooperate. How thoroughly the probability of complications and recurrences should be explained to the patient will vary with individual cases. Usually it is not well to go any further into such discussion than the patient may demand. He should be told, however, that the relief of symptoms does not mean his lesion is healed and that he must plan to adhere to a regulated dietary regimen for a year. If he can be kept under reasonable control, with some education regarding this manner of living and habits for this period of time favorable habits will have been formed and the likelihood of recurrence at least decreased.

REST. Ambulatory treatment for ulcer has become popularized to an unfortunate extent. Fifteen or twenty years ago a patient with peptic ulcer was advised to be hospitalized if possible and at any rate to spend three to six weeks at rest in bed or at least away from his work. In recent years ambulatory treatment from the outset has been advised or allowed almost universally. Our experience with ulcer in Naval Hospitals where bed rest and strictest regulation of diet and medication could be carried out convinced us that the general abandonment of this method has been unfortunate. Two to three weeks of rest under ideal hospital management would constitute an excellent plan in the early treatment of all simple ulcers.

Obvious focal infections should be removed. Carious or abscessed teeth and infected sinuses are the most usual foci but diseased gall bladders and prostates and infections of the rectum and lower bowel must also be considered.

Nervous stress and tension must be relieved whenever possible. This may be accomplished in part by the patient's knowledge of his condition. Domestic, business or financial tension can seldom be relieved by the physician but these should be called to the attention of the patient and he be urged to correct them as much as possible. Ambulatory treatment has been popular largely because it does not entail a period of unproductivity and consequent financial worry. On this account it will no doubt continue to be used in the majority of cases.

Contributory physical defects must be corrected. Anemia, if moderate or marked, should be treated by transfusion. If markedly underweight or overweight, the diet should be so prescribed as to bring the patient toward a normal weight. A coexisting diabetes, thyrotoxicosis, syphilis, tuberculosis, bronchiectasis or other debilitating disease must obviously receive the most careful attention.

Alcohol and tobacco should be omitted entirely during the period of active treatment and

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preferably for good. This is not usually difficult at first since the use of either is ordinarily associated with increased pain. With the disappearance of symptoms, however, it becomes hard to prevent the average patient from resuming tobacco and, later, alcohol. What their use contributes toward recurrences of ulcer, it is difficult to estimate.

DIET

B1 and, nonirritating foods best suited to bind the free acid of the stomach juices are given at frequent intervals. While the Sippy plan of feeding is the basic principle followed some individual modification is almost always made. Milk, cream, eggs, cooked cereals, ground meat and pureed vegetables are the principal foods used.

MILK. One well known authority believes milk harmful in the treatment of ulcers but generally it is accepted as the foundation of all dietary plans. It contains all the necessary elements of food, is almost universally available, is easily digested and assimilated, and is acceptable to the taste for most people. It causes reduction in gastric secretion and acidity perhaps better than any other food. Whole milk is used or this may be fortified with the addition of cream for increase in food value. The fat of cream tends also to retard gastric motility and emptying thereby prolonging the desired anacid effect.

EGGS. Additional protein is supplied first in the form of eggs which may be used raw or soft cooked. They generally are well tolerated and there is no reason why they may not be used in the very first days of treatment if desired. Custard, prepared with milk, and egg without seasoning adds an early and welcome variety to the diet.

CEREALS. Cooked cereals strained free of roughage may be used very early. They serve also as a vehicle for milk and cream and the added sugar has no disadvantage.

MEAT. Chicken and ground beef are usually used first but generally not during the first two weeks. Turkey and other fowl are generally not used early. Lamb is suitable if ground or very well cooked. Pork is used late and sparingly if at all, and fresh pork, of course, is avoided. All meats are preferably boiled, roasted or baked.

SOUPS. Cream soups may be used but meat extractions and seasoned soups are to be avoided.

FRUIT JUICES. Fruit juices are stimulating to acid secretion and are best avoided altogether as are raw fruits. Canned fruits are generally used only after the first three weeks of treatment.

VEGETABLES. Vegetables at first must be pureed in order to eliminate roughage. Carrots, peas, green beans may be pureed fresh or used as prepared for infants. Spinach is said to excite gastric secretion more actively than the others and should not be used early. Mashed or baked potatoes may be used.

DRINKS. Tea and coffee should not be used early. Sanka coffee, postum, ovaltine, chocolate milk, malted milk may be used for variety. After the first few weeks of treatment a single cup of coffee with cream, or tea, is probably not harmful. Warm drinks and warm foods tend to be less stimulating to acid secretion than cold.

DIETARY REGIMEN

The first week is highly important. It is then that the patient will follow implicitly whatever directions are given. If the results are satisfactory or dramatic in the disappearance of pain and anxiety he will have great confidence in the plan and will probably follow very well whatever later advice is given. Explicit directions for diet, rest and medication and for successive visits should be given. These details constitute the difference between adequate and haphazard treatment. Variation of the dietary schedule to suit the patient's hours, if he remains at work, should be made. He or his wife will inquire in detail regarding certain articles of diet or preparation of food. This should be explained carefully and cheerfully if the best cooperation is desired.

One must first determine whether alkaline therapy is to be used. If it is, the feedings may be spaced two hours apart and medication given on the alternate hours. If the acidity and gastric secretion is low and the patient's symptoms not pronounced diet alone, without alkali, may be used. Some form of vitamin therapy should supplement the diet - usually one or two multiple vitamin tablets daily will suffice or one may prefer to use Brewers yeast given before each meal. Such

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antispasmodic medication, for example atropin, belladonna or phenobarbitol, as is used, should be prescribed for specific times or for the relief of symptoms as they appear. Laxative medication, usually in the form of powders or as milk of magnesia should be specifically directed.

Adaptation of the Sippy diet in Manual TM 8-500 is adequate.

(Part II of this Article to be continued in the Surgeon's Circular Letter No. 8, July 1948.)

PART III

STATISTICAL

Evacuation

During the period 28 Feb to 26 Mar 1948, the following patients were evacuated from the several major commands:

Evacuations per thousand strength for the period 28 Feb to 26 Mar 1948:

	AIR	WATER	TOTAL
JAPAN	201*	13*	214*
KOREA	49**	0	49
MARBO	21	0	21
PHILRYCOM	44	2	46

JAPAN	2.8*
KOREA	1.8
MARBO	1.1
PHILRYCOM	1.1
THEATER	1.9

*Includes air evacuees from Korea.

**Patients evacuated to Japan for onward evacuation.

Hospitalization

1. The Bed Status Report as of 26 March 1948 was as follows:

	Total T/O Beds Present	Total T/O Beds Establ.	Total T/O Beds Occupd.	% T/O Beds Occupied	% Operating Beds Occupd.
JAPAN	4,450	4,450	1,987	45	45
KOREA	2,050	1,175	698	34	59
MARBO	825	825	248	30	30
PHILRYCOM	2,350	1,935	1,244	53	64
THEATER	9,675	8,385	4,177	43	50

2. Tables showing varicus admission rates per 1,000 per annum for the 4-week period ending 26 March 1948:

	THEATER	JAPAN	KOREA	MARBO	PHILRYCOM
All Causes	618	772	740	321	408
Disease	559	715	660	258	363
Injury	58	58	80	63	45
Psychiatric	17	17	36	11	8.9
Rheumatic Fever	1.8	2.0	2.9	0	1.4
Common Respiratory Disease	111	138	196	21	53
Influenza	3.7	6.2	2.4	1.3	1.1
Primary Atypical Pneumonia	5.4	4.5	14	.67	3.7
Common Diarrhea	6.5	2.9	16	.67	9.7
Bacillary Dysentery	.84	.17	0	0	2.9
Amebic Dysentery	2.3	.34	2.9	.67	6.0
Malaria	5.6	1.5	0	1.3	17
Infectious Hepatitis	4.2	4.7	6.3	2.7	2.9
Mycotic Dermatoses	6.6	10	8.2	0	2.6
Venereal Disease	88	125	103	29	43

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